Data Documentation Initiative
DDI

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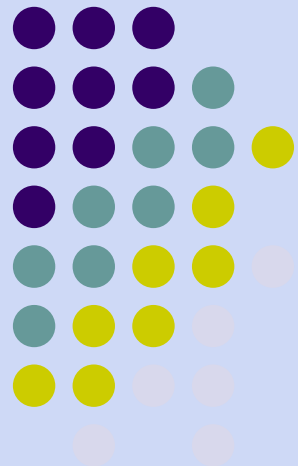


Presented at the DataShare project meeting
University of Edinburgh, Feb 5-6, 2008

Evolution of the versions of DDI

- DDI 1: microdata surveys
- DDI 2: added aggregate tabular data
- DDI 3: modular, life cycle model, complex data files, comparative data files

<ddi>

Metadata powered by the
Data Documentation Initiative

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Structure of DDI2

- **Document description**: information about the DDI document and how it was created with bibliographic citation
- **Study description**: information about the context of the data production and distribution (creators, methodology, abstract, keywords, etc.)
- **Data files description**: information about the data file or files (format, size, number of cases, etc.)
- **Variable description**: information about the data items or rows and columns in a tabular data file/s
- **Other study materials**: inline reference materials or references to external reference materials (coding schemes, thesauri, citations to publications, etc.)

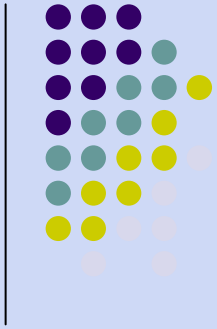
Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI 2 and DDI 3 comparison

Version 2	Version 3.0
Inadequate representation of complex / hierarchical data	Detailed documentation for complex / hierarchical data
No instrument coverage.	Full description of instrument as a separate entity.
Question text appears only as part of variable description.	Compatible with Computer Assisted Interviewing software.
No documentation for question flow / conditions.	Documents specific use of questions: flow, conditions, loops.
Initially designed for microdata only	Adds support for tabular, spreadsheet-type, representation of aggregate data
Aggregate data section added in V 2.1 to support limited representation (Census-type data, delimited files)	Aggregate data transport option: cell content may be included inline with the data item description
No data transport function	In-line inclusion enabled for both aggregate data and microdata
No Longitudinal / Time Series / Cross-national Data Comparability	Grouping structure documents studies related on one or several dimensions (time, geography, language, etc.) as well as their comparability
Limited Multilingual Support	Support for multiple language use and translations
Single File, Hierarchical design	Modular design: Facilitates reuse; Facilitates versioning and maintenance; Supports life cycle model; Allows flexibility in organizing the DDI Instance; Supports grouping and comparing studies; Supports creation of metadata registries

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI 3 timetable for publication



Version 3.0:

- February 15 - April 14, 2007: Public Review Period
- April 15 - May 1, 2007: Adjusted Schemas based on Public Review
- May 2007: Voted to Publish Version 3.0 as Candidate Draft
- July 2007: Candidate Draft Released
- December 2007: Full Proof of Concept Presented
- April 2008: Official Publication of Version 3.0; Updated examples and use cases; High level documentation updated

http://www.ddialliance.org/ddi3/index.html

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Version 3.0 is Life Cycle oriented and modular

Designed to cover all stages in the life cycle of a data collection:

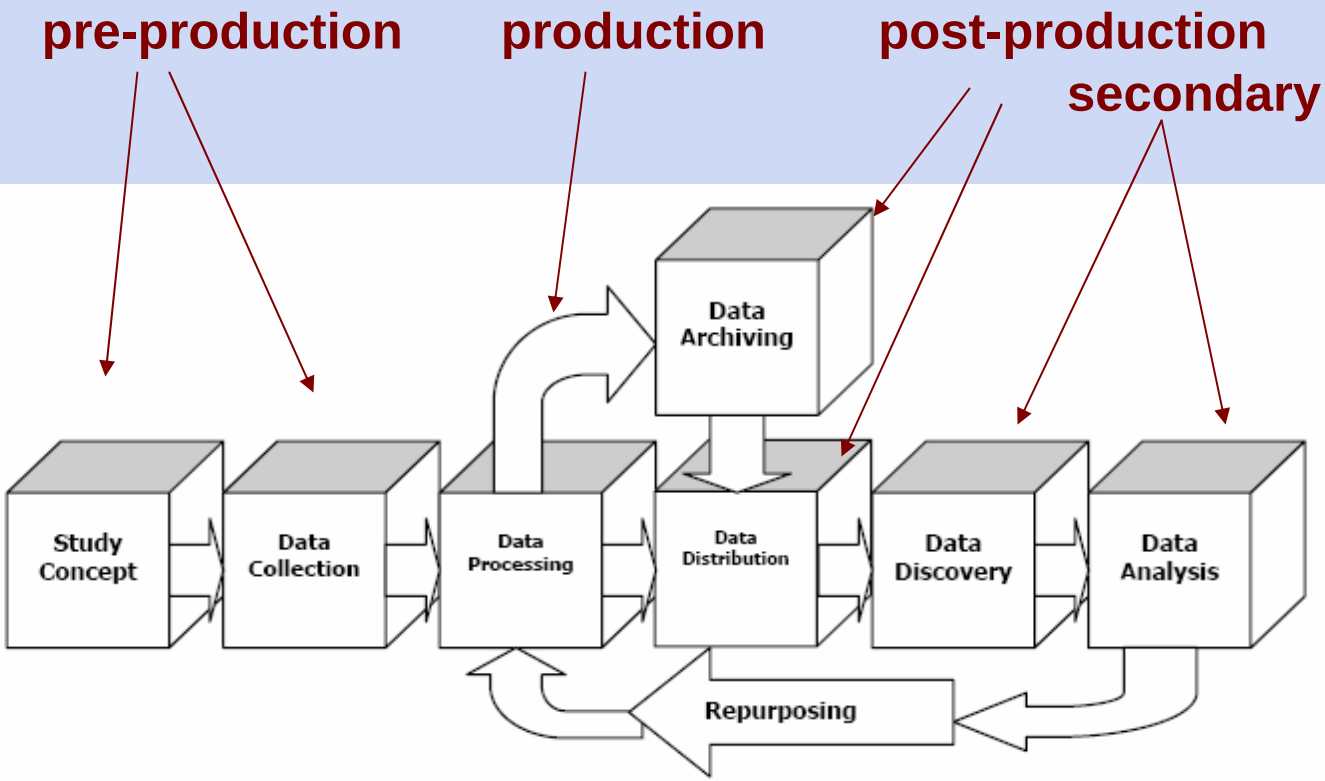
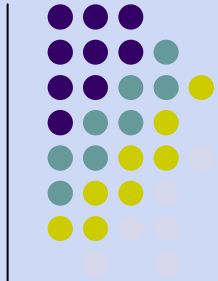


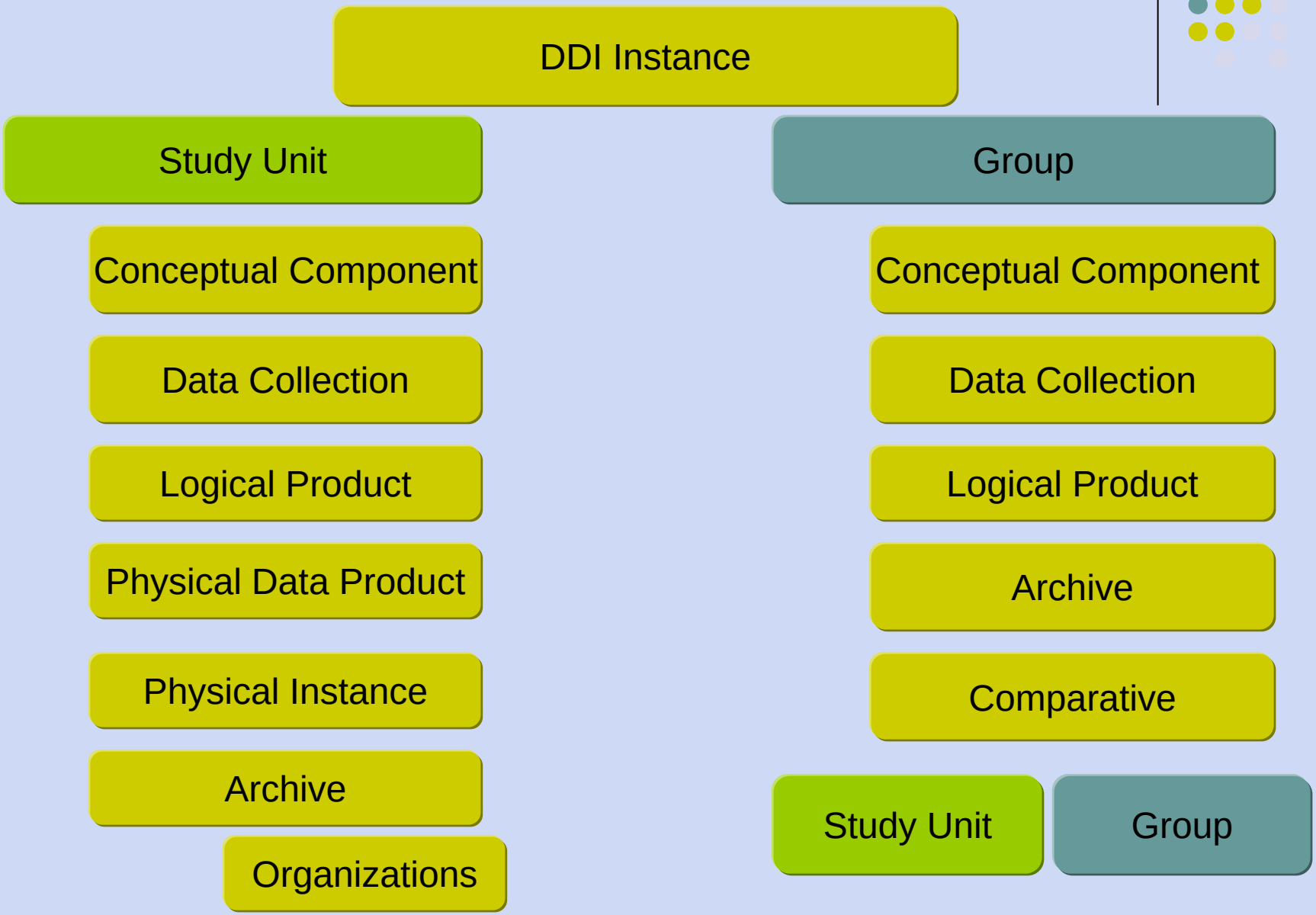
Figure: Combined Life Cycle Model

rg.

DDI Version 3.0 Modules

-- Structural Overview --

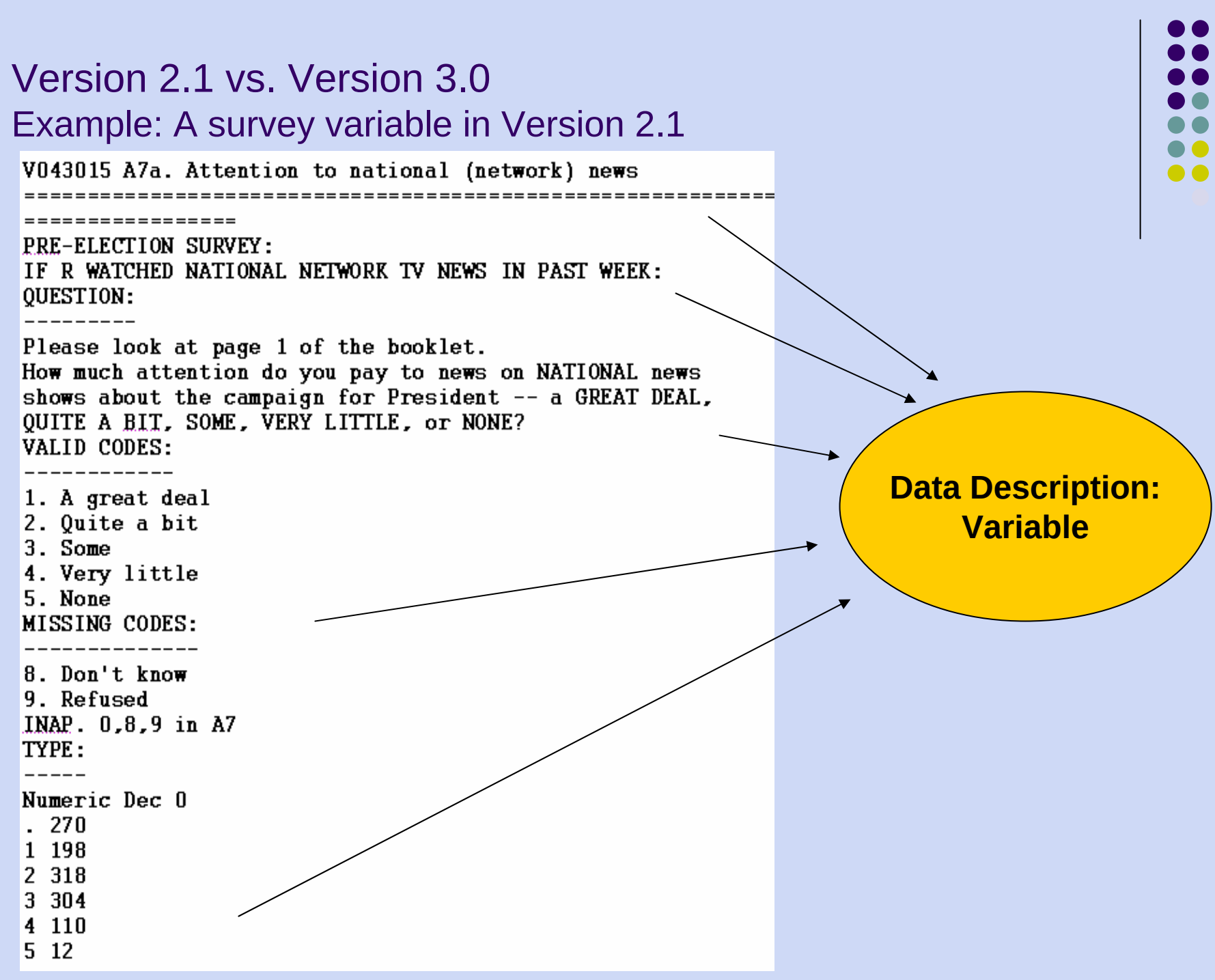




Version 2.1 vs. Version 3.0

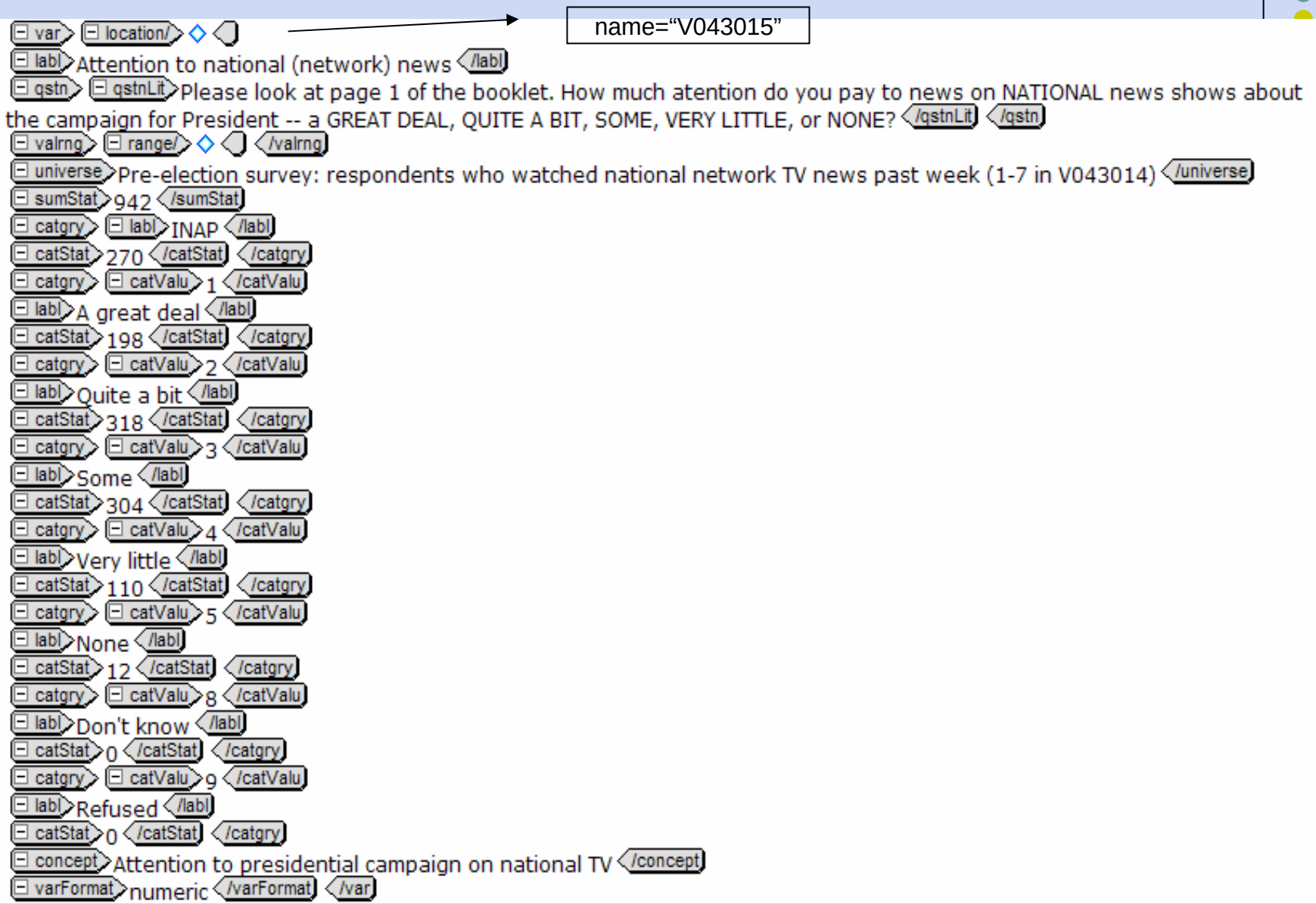
Example: A survey variable in Version 2.1

```
V043015 A7a. Attention to national (network) news
================================================================
================
PRE-ELECTION SURVEY:
IF R WATCHED NATIONAL NETWORK TV NEWS IN PAST WEEK:
QUESTION:
---------
Please look at page 1 of the booklet.
How much attention do you pay to news on NATIONAL news
shows about the campaign for President -- a GREAT DEAL,
QUITE A BIT, SOME, VERY LITTLE, or NONE?
VALID CODES:
------------
1. A great deal
2. Quite a bit
3. Some
4. Very little
5. None
MISSING CODES:
--------------
8. Don't know
9. Refused
INAP. 0,8,9 in A7
TYPE:
-----
Numeric Dec 0
. 270
1 198
2 318
3 304
4 110
5 12
```



Version 2.1 vs. Version 3.0

Example: A survey variable in Version 2.1



Version 2.1 vs. Version 3.0
Example: A survey variable in Version 3.0

```
V043015 A7a. Attention to national (network) news
================================================================
================
PRE-ELECTION SURVEY:
IF R WATCHED NATIONAL NETWORK TV NEWS IN PAST WEEK:
QUESTION:
---------
Please look at page 1 of the booklet.
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3. Some
4. Very little
5. None
MISSING CODES:
--------------
8. Don't know
9. Refused
INAP. 0,8,9 in A7
TYPE:
-----
Numeric Dec 0
. 270
1 198
2 318
3 304
4 110
5 12
```

Logical Product: Variable Scheme

Conceptual Component: Concept Scheme Universe Scheme

Data Collection: Question Scheme

Logical Product: Code Scheme

Logical Product: Category Scheme

Physical Instance: Statistics

DDI 3.0 Markup
Modules used in a full variable description

Concept
Universe

Question

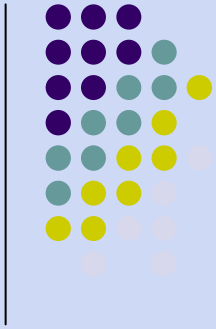
Values
Value Labels
Variable name
Variable label

Statistics

Location:

Physical Data Product

Where to start understanding the DDI?

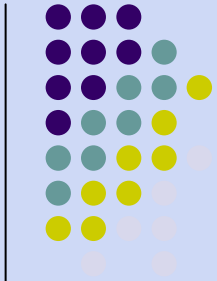


DDI website: **http://www.ddialliance.org/ddi3/**

- **Sample XML Files:** created for the public review version of DDI 3.0
- **Getting Started with DDI 3.0**: describes how to begin coding documents in XML and how to convert existing collections.
- ***DDI Directions***: newsletter on the DDI Alliance website

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Help understanding and producing DDI 3.0 markup



- DDI HELP:

  Detailed information about each module

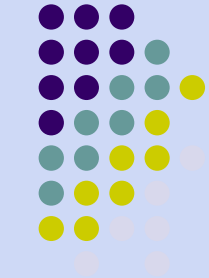
  http://opendatafoundation.org/infocenter/index.jsp?topic=/net.sf.ddialliance.help/html/welcome.html

- Version 3.0 documentation:

  http://www.ddialliance.org/ddi3/index.html

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Software to assist in document viewing, transformation and production



- DeXtris:
  - XML browser to view and search DDI files
  - Converts DDI 1/2 to DDI 3.0

  http://www.opendatafoundation.org/tools/dextris
- SPSS to DDI 3.0 converters
  - DDI Alliance website:

  http://www.ddialliance.org/DDI/ddi3/proof.html
  - StatsProgs2DDI (beta) from ZUMA:

  http://db.zuma-mannheim.de/DDI/StatsProgs2DDI/StatsProgs2DDI.html

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

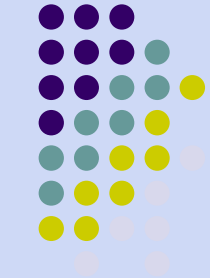
Other XML tools

- **XML editor: oXygen**
  - Create new DDI instance
  - Edit/update DDI instance
  - Validate DDI instance
  - View schemas

- **DDI 3.0 Stylesheets/Transforms**
  - Basic: transform the XML file into XHTML for Web presentation.
  - Enhanced: passes the XML file through a series of stylesheets to add more advanced features to the XHTML display, such as graphical representation of frequencies, and automated calculation of valid percentages.

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI Toolkit in development (open source)

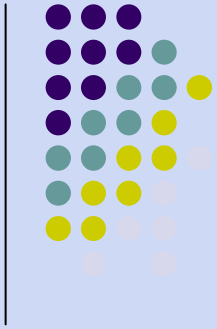


Developed by the DDI Alliance, GESIS-ZUMA, UKDA, DDA, Canada RDCs, and OdaF.

- DDI Version 1/2 <-> Version 3.0 converters
- DDI 3.0 URN resolution tool
- DDI 3.0 validation tool
- Version 3.0 stylesheets with display and editing layers
- Grouping tool
- Concept management tool
- Registry applications

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Tools from the International Household Survey Network



http://www.surveynetwork.org/home/

Combination of open source and NESSTAR (licensed)

Microdata Management Toolkit: uses the DDI metadata standard and the Nesstar content management and analysis system.

Metadata Editor is used to document data in accordance with international metadata standards (DDI and Dublin Core).

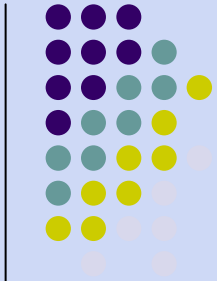
Explorer is a free reader for files generated by the Metadata Editor. It allows users to view the metadata and to export the data into various common formats (Stata, SPSS, etc).

CD-ROM Builder is used to generate user-friendly outputs (CD-ROM, website) for dissemination and archiving."

Quick Reference Guide for Data Archivists

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI and Institutional Repositories



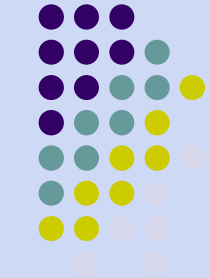
GOAL: Take advantage of DDI to classify, describe, and organize datasets

QUESTIONS:

- use DDI 2 or DDI 3?
- how many and which tags are needed?
- does DDI address the requirements for access management, linking to other publications and preservation?
- in which ways could DDI be progressively incorporated and used in IRs?

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI 1/2 or DDI 3.0?
Take what you can get!



- DDI 3.0 will not supersede DDI 2.1
- Both versions will
  - coexist
  - continue to be maintained
  - be used according to specific needs
- All DDI 1/2 markup will not have to be migrated to Version 3.0

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI 2 Lite

CESSDA 2001 recommendations:

http://www.ddialliance.org/DDI/related/cessda-rec.pdf

- Examples from the various CESSDA archives were collected and compared
- Defined a realistic least common denominator for the CESSDA archives in English
- Used to make cross archive substantive searches
- A set of strongly recommended fields constituting the basic information on any dataset.

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI 2 and Dublin Core

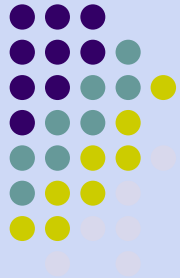
DC Element	DDI Element	Notes
Title	<titl> 2.1.1.1	Title of Data Collection
Creator	<AuthEnty> 2.1.2.1	Authoring Entity of Data Collection
Subject	<keyword> 2.2.1.1	Keyword(s)
	<topcClas> 2.2.1.2	Topic Classification
Description	<abstract> 2.2.2	Abstract
Publisher	<producer> 2.1.3.1	Producer of Data Collection
Contributor	<othId> 2.1.2.2	Other Identification/Acknowledgements - Data Collection
Date	<prodDate> 2.1.3.3	Production Date - Data Collection
Type	<dataKind> 2.2.3.10	Kind of Data
Format	<fileType> 3.1.5	Type of File
Identifier	<IDNo> 2.1.1.5	ID Number - Data Collection
	<holdings location="" callno="" URI=""> 2.1.8	Holdings Information - Data Collection
Source	<sources> 2.3.1.8	Sources - Used for Data Collection
Language		
Relation	<othrStdyMat> 2.5	Other Study Description Materials
Coverage	<timePrd> 2.2.3.1	Time Period Covered
	<collDate> 2.2.3.2	Date(s) of Data Collection
	<nation> 2.2.3.3	Country
	<geogCover> 2.2.3.4	Geographic Coverage
Rights	<copyright> 2.1.3.2	Copyright - Data Collection

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Dublin Core (Basic)	DDI 3.0
Contributor	Citation: Contributor (in Instance, StudyUnit, Group and Phys. Instance)
Coverage	Coverage: SpatialCoverage, and Coverage: TemporalCoverage (in Instance, StudyUnit, Group and Phys. Instance)
Creator	Citation: Creator (in Instance, StudyUnit, Group and Phys. Instance)
Date	Coverage: Temporal: AdministrativeDate, (in Instance, StudyUnit, Group and Phys. Instance) OR LifeCycleInformation: LifeCycleEvent: Date (in Archive)
Description	Abstract (in StudyUnit, and Group)
Format	Item: Format (in Archive)
Identifier	Item: Call Number (in Archive)
Language	Translation Information: Language (in Instance)

Dublin Core (Basic)	DDI 3.0
Publisher	Citation: Publisher (in Instance, StudyUnit, Group and Phys. Instance)
Relation	OtherMaterial (in Instance, StudyUnit, Group and Phys. Instance)
Rights	Citation: Copyright (in Instance, StudyUnit, Group and Phys. Instance)
Source	OtherMaterial (in Instance, StudyUnit, Group and Phys. Instance)
Subject	Coverage: Topical (in Instance, StudyUnit, Group and Phys. Instance)
Title	Citation: Title (in Instance, StudyUnit, Group and Phys. Instance)
Type	DataKind (in StudyUnit module)

Qualified Dublin Core elements and DDI 3



“Qualified” Dublin Core Elements	**DDI 3.0**
Audience	NA
Provenance	Item: OriginalArchiveOrganizationReference (in Archive)
RightsHolder	Citation: Copyright (in Instance, StudyUnit, Group and Phys. Instance) OR Organization/Individual: Role (In Archive: Organizations)

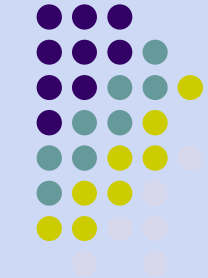
Source: Sanda Ianescu, ICPSR.

Dublin Core Elements	DC Element Qualifiers	DDI 3.0
Title	Alternative	Citation: Alternate Title
Description	Table of Contents	Item->Item (nestable) (in Archive)
	Abstract	Abstract
Date	Created Valid Available Issued Modified	Coverage: TemporalCoverage: Administrative Date: Type (has Controlled Vocabulary)
Format	Extent	Item: DataFileQuantity (in Archive)
	Medium	Item: Media (in Archive)
Relation	Is Version Of Has Version Is Replaced By Replaces Is Required By Requires Is Part Of Has Part Is Referenced By References Is Format Of Has Format	OtherMaterial: Type
Coverage	Spatial	Coverage: SpatialCoverage
	Temporal	Coverage: TemporalCoverage

Source: Sanda Ianescu, ICPSR.

Core v3: based upon DDI 2 Lite

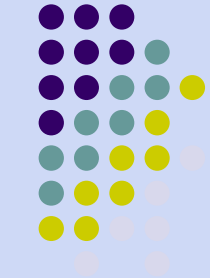
(see appendix in DataShare report)



- Describes the study as a whole, the data files, and the variables in the files
- Uses information from the following modules:
  - Study unit
    - Conceptual Component
    - Data Collection
    - Logical Product
    - Physical Data Product
    - Physical Instance
    - Archive
    - Organization

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

DDI 2 and OAI-PMH: ESDS



The Economic and Social Data Service (ESDS) has an OAI-PMH implementation that uses DDI 2

Responds to a *ListRecords* request returning a record with most of the information but not Data Files and Variables descriptions.

As an example, the (non public) URLs below display the metadata formats available in ESDS and the DDI record for study number 2473 :

http://oai.esds.ac.uk/oai.asp?verb=ListMetadataFormats

http://oai.esds.ac.uk/oai.asp?verb=GetRecord&identifier=oai%3Aesds.ac.uk%3AESDS%2FESDSA%2Fsn2473.xml&metadataPrefix=ddi

http://oai.esds.ac.uk/

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

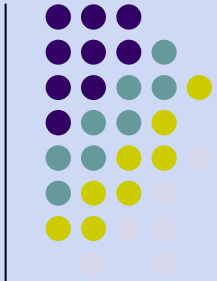
DDI 3 and OAI-PMH: MIT

MacKenzie Smith email, July 17, 2007:

- OAI-PMH Harvester Agent for Social Science Data Services
- This is a command-line executable agent that interacts with OAI Gateways or URLs to generate METS packages containing the resources referenced by the document residing at that URL.
- The object residing at that URL is a DDI document. In the DSpace case, a handler processes the DDI document instance found within an OAI /GetRecord/ call

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

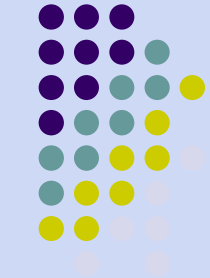
Using DDI for access management



- Both DDI 2 and DDI 3 have tags that can be used to deal with the access management requirements.
- In DDI 2 this can be achieved through the Data Access tag (<dataAccs>) which describes access conditions. In cases where access conditions differ across individual files or variables, multiple access conditions can be specified.
- In DDI 3.0 the relevant tags are in the Archive module under access type.

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

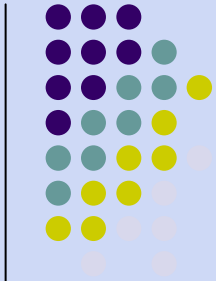
Using DDI for Linking to other materials (publications, maps, images, etc.)



- Both versions of DDI will allow linking to publications.
- In DDI 2 the “Other Study Materials” section allows linking to related studies through title of study, author, producer, version and physical location amongst others.
- In DDI 3, linking to other materials happens in the study unit module.

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.

Preservation metadata and DDI 3

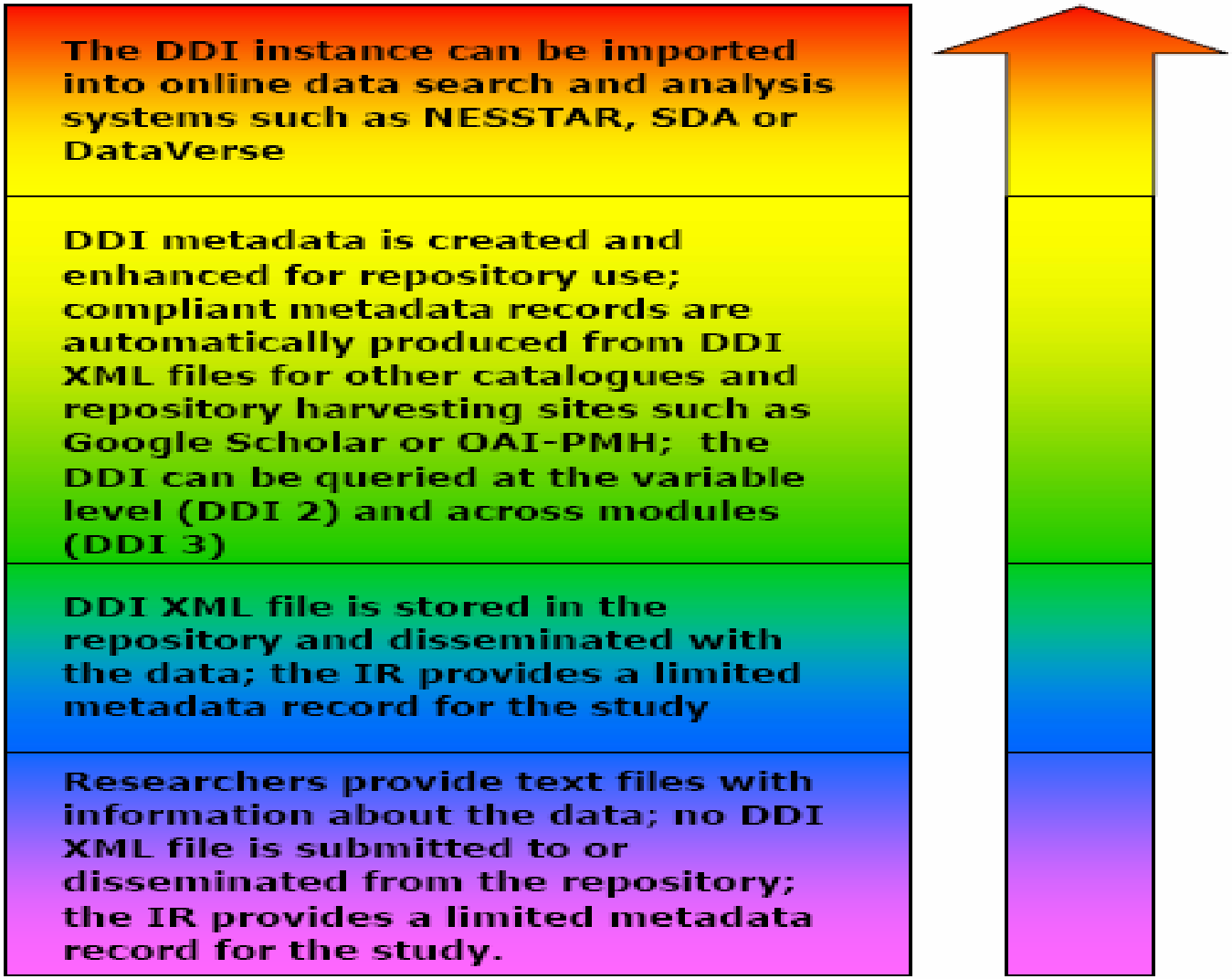


PLEDGE:

Incorporate the Virtual Data Center into PLEDGE activities

Transforming descriptive and administrative metadata out of DDI formats and into MODS and PREMIS for inclusion in METS SIPs. **http://pledge.mit.edu/index.php/VDCIntegration**

Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.



Sources: Sanda Ianescu, ICPSR. Introduction to DDI 3. CESSDA Expert Seminar, September 2007 (ppt). DDI Alliance:www.ddialliance.org. DDI and institutional repositories by Luis Martinez Uribe (UK-DISC: DataShare) 2008.